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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Naoki Mukaida

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10/05/2006

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EXAMINER

ROJAS, MIDYS

ART UNIT

PAPER NUMBER

2185

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/032,949	<b>Applicant(s)</b> MUKAIDA ET AL.	
	<b>Examiner</b> Midys Rojas	<b>Art Unit</b> 2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 7/13/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,17,18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,17,18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to amended claims 1, 3, 17-18, and 20, filed on 7/13/06 have been fully considered but are not persuasive.

Applicant argues that unlike the reference relied upon, in the claimed invention; free pages are searched within a physical block. Therefore, the claimed invention is configured to search a target that is fundamentally different from the target to be searched in the Hiraka reference. However, Hiraka teaches the searching for empty blocks from among a group of blocks. Since a block consist of a plurality of pages, in searching for an empty block, the system of Hiraka is essentially searching for empty (or free) pages within the physical block. In finding the empty physical block, the system of Hiraka is indeed finding free pages within a physical block.

Applicant also argues that in the claimed invention free pages within a block where user data is written are searched, while in the Hiraka reference, empty blocks where no user data is written are searched. However, the claimed invention discloses the user data being written in a redundant area of a block; the user data is not necessarily written within the block being searched. In the system of Hiraka, the empty block table represents the redundant area of the block.

Applicant argues that in the claimed invention, a redundant area of each page is directly searched while the apparatus of the Hiraka reference performs a search by accessing an empty block table. However, in Hiraka the empty block table is a shadow of the redundant area of each page since the table is initialized using the information contained in the redundant areas.

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Therefore, in searching the table, the system of Hiraka is essentially searching the contents of the redundant areas (see Col. 5, lines 25-35 and Col. 7, lines 24-40)

Applicant also argues that in the Hiraka reference, a logic block address written in the redundant area is checked only when the empty block table is initialized, while in the claimed invention, the redundant area of each page is searched every time that a search is performed for free pages within a block where user data is written. However, the Examiner would like to point out that the invention as claimed does not specify how often a search of the redundant area is done ("every time"), but simply expresses that the search is done "based on start page data written in a redundant area...". Additionally, the empty block table of Hiraka is initialized during power up of the system (Col. 7, lines 24-40) and its available for searching from that point on. Since the table is a shadow of the redundant areas, whenever they are searched, the redundant areas are essentially being searched as well.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 17-18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiraka (5,987,573).

Regarding Claim 1, Hiraka discloses a memory controller (10, Fig. 1) for accessing a memory (FM0) having a plurality of blocks each constituted of a plurality of pages (Col. 5, lines 15-23) based on a host address supplied from a host computer (14), comprising:

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search means for searching, based on start page data written in a redundant area of a block including a target page designated by the host address (Col. 5, lines 25-35), a number of a start page of the block where the start page indicates a page, a preceding page thereof not being a free page and all following pages among the pages included in the corresponding block being free pages (Col. 17, Claim 1, lines 25-34);

when the system of Hiraka marks a block as empty, wherein a block is made of pages, the pages prior to the first page of the block may not be free since they are part of another block that may not be empty. However, the preceding pages within the same block are free since the entire block is empty.

decision means responsive to a request to write user data issued by the host computer for determining whether progressive data writing for writing user data to the target page designated by the host address is possible (control section, Col. 17, Claim 1, lines 12-19); and

write means responsive to an affirmative determination by the decision means for writing user data to the target page without performing an inter-block data transfer (detection of empty block is done when in a writing mode, Col. 2, lines 45-55),

wherein the decision means makes the decision that progressive data writing is possible if the number of the target page is equal to or greater than that of the start page. In the system of Hiraka, all blocks are of the same size. Therefore, when a block is detected as being empty, the entire block is empty and therefore, it is sufficient space to store a new block of data.

Regarding Claim 3, Hiraka discloses writing at least a part of new free page information resulting from writing user data to at least one page included in the block, which includes the

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target page (block status information written in the redundant area of memory pages when user data is written to the memory pages, Col. 5, lines 25-35).

Claims 17 and 20 are rejected using the same rationale as that of Claim 1.

Claim 18 is rejected using the same rationale as that of Claim 3.

### ***Conclusion***

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Midys Rojas whose telephone number is (571) 272-4207. The examiner can normally be reached on M-F 5:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 1<sup>st</sup>, 2006

  
Midys Rojas  
Examiner  
Art Unit 2185

MR

  
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